SOUTH AFRICAN JOURNAL OF SCIENCE

Volume 95, 1999

INDEX

Index to Parts

No. 1:	January	1–48
No. 2:	February	49–112
No. 3:	March	113–152, i–xxiv
No. 4:	April	153–208
No. 5:	May	209–242, i–xxxviii
No. 6/7:	June/July	243–314
No. 8:	August	363–418
No. 9:	September	419–474
No. 10:	October	475–512
No. 11/12:	Nov/Dec	476–558, ix–xxviii

A

Absorption in TEM images. A lower limit for normal absorption in the calculation of transmission electron microscope images . . . 349

Acheulo-Yabrudian layer. A ^{230}Th/^{234}U date for the Acheulo-Yabrudian layer in the Jamal Cave, Mount Carmel, Israel 186

Aeronomy research. A review of geomagnetism and aeronomy research in South Africa: 1995–1998 272

Aerosol transport. The Ben Macdhui High Altitude Trace Gas and Aerosol Transport Experiment 35

Aerosol vertical distribution. Stable discontinuities as determinants of the vertical distribution of aerosols and trace gases in the atmosphere 63

African Renaissance. African Renaissance or descent into anarchy? 423

AGENBAG, J.J., *et al.* 281

Agony Column . . . . . . 56, no. 3: xxiv, 162, no. 5: xxxviii, 314, 326, 402, 433, 552

ALBERTS, V., *et al.* 415

Alcoholic hangover effects. Neuropsychological correlates of alcholic hangover 145

ALEXANDER, W.J.R. 321,423

Algal productivity. Temporal variability in the effects of grazing by the territorial limpet *Patella longicosta* on the productivity of the crustose alga *Ralfsia verrucosa* 121

Alien vegetation removal. A cost-benefit analysis of removing alien trees in the Tsitskamma mountain catchment 442

Alluvial terraces. Orange River alluvial terraces: is luminescence dating a useful tool? 57

Aluminide compounds. Aluminide compounds of selected ternary ruthenium and iridium systems 517

Analytical techniques. The platinum-group metals — an analytical challenge 499

ANDERSON, C.A., *et al.* 35

ANDERSON, S. and DAWSON, J. 145

Animal disease control. Alternatives for controlling animal diseases resulting from interaction between livestock and wildlife in southern Africa 71

ANNEGARN, H.J., *et al.* 141

ANSORGE, I.J., *et al.* 420

Antarctica. Surface UV-B irradiance and total column ozone above SANAE, Antarctica 26

Antibacterial activity. The antibacterial activity of 27 southern African members of the Combretaceae 148

Antifungal activity. The antifungal effect of fumonisin B_1 on *Fusarium* and other fungal species 455

Aquatic biodiversity. Sustainable use of aquatic biodiversity: data, tools and cooperation 245

Aquatic environments. Perspectives on inland-water ecosystems: book review . . . . . . No.3: xxiii

Archaelogy. Landmark synthesis of archaeological heritage: book review 432

Aromatic plants. Alternative uses for some invader plants: turning liabilities into assets 329

Ascomycetous yeasts. Interpreting the automictic ascomycetous yeasts 440

ASHTON, P., *et al.* 259

ASHWORTH, T.V., *et al.* 499

Atmospheric changes. Atmospheric circulation changes and palaeoclimates of southern Africa 194

Atmospheric lead. A note on changes in atmospheric lead content in seven cities in South Africa 117

Atmospheric recirculation. The Ben Macdhui High Altitude Trace Gas and Aerosol Transport Experiment 35

Atmospheric research. A review of research in South African meteorology and atmospheric sciences: 1995–1998 288

Atmospheric stability discontinuities. Stable discontinuities as determinants of the vertical distribution of aerosols and trace gases in the atmosphere 63

Australopithecus discovery. Discovery of complete arm and hand of the 3.3-million-year-old *Australopithecus* skeleton from Sterkfontein 477

Automixis. Interpreting the automictic ascomycetous yeasts 440

Avian research. Flying high: current directions in avian research . . . 50

B

Baboon reproduction. Birth patterns in the Drakensberg Mountain baboons (*Papio cynocephalus ursinus*) 354

BALOGH, A.G., *et al.* 141

BAMFORD, M. 231

BARRETT, L., *et al.* 240

BATEMAN, M.D. and HOLMES, P.J. 57

Baumgartel, Walter. Memories of Walter Baumgartel (1902–1997): pioneering promoter of the mountain gorillas of Uganda . . 114

BEATI, L., *et al.* 448

Beaufort Group therapsid. *Eunotosaurus africanus* from the Ecca-Beaufort contact in Northern Cape Province, South Africa — implications for Karoo Basin development 553

BEER, D.J. DE see DE BEER, D.J.

BEKKER, J., *et al.* 415

BEUKES, N.J., *et al.* 450

BHATTEX project : The Ben Macdhui High Altitude Trace Gas and Aerosol Transport Experiment 35

BIGGS, H.C., *et al.* 244

BIGGS, T. and TAYLOR, S.S. 543

Bird life-history strategies. Evolution of sociality and life-history strategies in birds: confronting northern perspectives in the southern hemisphere . . . 400
Bird social strategies. Evolution of sociality and life-history strategies in birds: confronting northern perspectives in the southern hemisphere . . . 400
Birth patterns. Birth patterns in the Drakensberg Mountain baboons (*Papio cynocephalus ursinus*) . . . 354
Black Sea Mediterranean interchange. Stable isotopic evidence from Holocene Sea of Marmara sediments for two-way water-mass interchange between the Black Sea and the Mediterranean Sea . . . 201
BLANKLEY, W. . . . 54
BODEKER, G.E., *et al.* . . . 26
BOIX-HINZEN, C., *et al.* . . . 400
BOLLONG, C.A. and SAMPSON, C.G. . . . 171
BOLTON, J.J. . . . 245
Bone formation. Sintered porous hydroxyapatites with intrinsic osteoinductive activity: geometric induction of bone formation . . . 335
Bone substitutes. Macroporous hydroxyapatite bioceramics by solid freeform fabrication: towards custom implants . . . 325
BOSQUE, C., *et al.* . . . 50
BOTHA, D.J., *et al.* . . . 344
BOWIE, R., *et al.* . . . 50
BOYD, A., *et al.* . . . 281
BRADBURY, J. and MILLER, R. . . . 30
BRADSHAW, S.M. . . . 394
BRAUNE, E., *et al.* . . . 259
BROOKE, B.D., *et al.* . . . 215
BROWN, N.A.C., *et al.* . . . 344
BRUNDRIT, G., *et al.* . . . 281
Bushveld Complex mineralization. Geological models for platinum-group metal mineralization in the Bushveld Complex . . . 490
Bushveld Complex. The platinum and palladium resources of the Bushveld Complex . . . 481

C

CAMPBELL, J.A.H., *et al.* . . . 311
CARRION, J.S., *et al.* . . . 44
Catalyis. Platinum in catalysis . . . 503
CAWTHORN, R.G. . . . 476, 481, 490
Chacma baboon behaviour. Male behaviour and the evolutionary ecology of chacma baboons . . . 240
Chacma baboon diet. Size-dependent tortoise predation by baboons at De Hoop Nature Reserve, South Africa . . . 123
CHEMALY, S.M. . . . 125
Chemical markers. Testing chemical markers on granivorous birds . . . 79
Chemistry programmes. Chemistry programmes at French technical institutes . . . 470
Chemotherapy. Platinum coordination compounds in cancer research and chemotherapy . . . 509
Chlorophyll fluorescence. Chlorophyll fluorescence and chlorophyll content as a measure of drought tolerance in potato . . . 407
Chloroquine sensitivity testing. Comparison of *in vitro* chloroquine sensitivity testing with detection of pfmdr1 point mutations in *Plasmodium falciparum* . . . 133
CHOWN, S.L. and HÄNEL, C. . . . 87
CLARKE, R.J. . . . 477
Clay-sized suspensions recovery. Recovery of dispersed clay-sized suspensions for X-ray diffraction mineral analysis . . . 390
Climatology research. A review of research in South African meteorology and atmospheric sciences: 1995–1998 . . . 288
Coastal research. Physical oceanographic activities in South Africa: 1995–1998 . . . 281
COETZEE, M., *et al.* . . . 215
Cold Air Cave. A 3000-year isotopic record from a stalagmite in Cold Air Cave, Makapansgat Valley, Northern Province . . . 46
Combretaceae. The antibacterial activity of 27 southern African members of the Combretaceae . . . 148
Combustion aerosols. Giant dendritic carbonaceous particles in Soweto aerosols . . . 141
Copper indium selenide absorber layers. The influence of H_2Se annealing procedure on the material quality of $CuInSe_2$ films . . . 415
Copper wire baskets. Computer generation of geometric designs woven into the *izimbenge* using algorithmic processes developed in the field of fractal geometry . . . 434
CORNISH, L.A., *et al.* . . . 517
CORRIGALL, A.V., *et al.* . . . 311
COVAS, R., *et al.* . . . 50, 400
COVILLE, N.J. and OKAFOR, V.I. . . . 503
CRAIG, A. . . . 112
CRAIG, A.J.F.K., *et al.* . . . 79
CROOKS, J., *et al.* . . . 335, 359
CRUSE, P.J., *et al.* . . . 311
CRUZ-URIBE, K. and KLEIN, R.G. . . . 81

D

DALVIE, M.A. and EHRLICH, R.I. . . . 316
DAMIANI, R.J. . . . 458
DAVIS, G.W., *et al.* . . . 344
DAWSON, J. and ANDERSON, S. . . . 145
DE BEER, D.J., *et al.* . . . 327
De Hoop Nature Reserve. Size-dependent tortoise predation by baboons at De Hoop Nature Reserve, South Africa . . . 123
DE LANGE, J.H., *et al.* . . . 344
DE MEIJER, R.J., *et al.* . . . 381
DE RONDE, J.A., *et al.* . . . 407
DE WIT, M.J. . . . 159
DENT, D., *et al.* . . . 59
DEVENTER, T VAN see VAN DEVENTER, T.
DIAB, R.D. . . . 117
DIAB, R.D., *et al.* . . . 26
DIJK, D.E. VAN see VAN DIJK, D.E.
Dissolved inorganic carbon measurements. A stable carbon isotope study of dissolved inorganic carbon in hardwater Lake Kinneret (Sea of Galilee) . . . 166
DONALDSON, J.S., *et al.* . . . 344
Drinking water quality. Quality assessments for chlorides, nitrates and phosphates in drinking water and waste-water effluents of major cities in the Eastern Cape, South Africa . . . 237
DU PLESSIS, M., *et al.* . . . 400
DU PLESSIS, M.A., *et al.* . . . 50
DU PREEZ, M. and HOSKING, S.G. . . . 442
DU PREEZ, W.B., *et al.* . . . 327
DUNCAN, A.R. . . . 247
DUNLEVEY, J.N. and STEPHENS, D.J. . . . 390

E

Eastern Cape water quality. Quality assessments for chlorides, nitrates and phosphates in drinking water and waste-water effluents of major cities in the Eastern Cape, South Africa . . . 237
Ecca-Beaufort therapsid, *Eunotosaurus africanus* from the Ecca-Beaufort contact in Northern Cape Province, South Africa — implications for Karoo Basin development . . . 553
Ecological research network. A South African long-term ecological research network: a first for Africa? . . . 244
Ecology. The numerate ecologist: book review . . . 432
EELEY, H.A.C., *et al.* . . . 461
Effluent treatment. Mineral-based treatment strategies for wastes and effluents . . . 367
EHRLICH, R.I. and DALVIE, M.A. . . . 316
EISENMANN, V., *et al.* . . . 357
Electronic theory of cancer. Albert Szent-Györgyi and the role of free radicals in the electronic theory of cancer . . . 332
ELOFF, J.N. . . . 148
Encephalization. Dating, demography, ecology and encephalization in relation to human evolution . . . 189
Endangered marine mollusc. *Siphonaria compressa*, South Africa's most endangered marine mollusc . . . 77
ENGELBRECHT, J.A.A. . . . 413

Ensiferan insect. The earliest known Palaeozoic ensiferan insect from Africa, *Afroedischia oosthuizeni* gen. *et* sp. nov. (Orthoptera: Oedischiidae) . . . 229

Environmental criteria. Developing environmental criteria and indicators for sustainable plantation management: the South African perspective . . . 461

Enzymatic reaction mechanisms. Vitamin B_{12} joins the club: a review of structural studies and implications for mechanisms of enzymatic reactions . . . 125

Equus craniometry. Craniometry of the genus *Equus* and the taxonomic affinities of the extinct South African quagga . . . 81

Eriocephalus punctulatus field management. Field management practices that do not adversely affect plant vigour and longevity of *Eriocephalus punctulatus* . . . 351

Essential-oil-yielding plants. Alternative uses for some invader plants: turning liabilities into assets . . . 329

EVERARD, D., *et al.* . . . 461

Evolutionary ecology. Male behaviour and the evolutionary ecology of chacma baboons . . . 240

EVRON, M. WEINSTEIN see WEINSTEIN-EVRON, M.

F

FATOKI, O.S. . . . 237

Forestry management. Developing environmental criteria and indicators for sustainable plantation management: the South African perspective . . . 461

Fossil woods. Pliocene fossil woods from an early hominid cave deposit, Sterkfontein, South Africa . . . 231

Fractal geometry. Computer generation of geometric designs woven into the *izimbenge* using algorithmic processes developed in the field of fractal geometry . . . 434

FRANCOIS, V.E., *et al.* . . . 499

FREAN, J.A., *et al.* . . . 133

FREIMAN, M.T., *et al.* . . . 35

French technical institutes. Chemistry programmes at French technical institutes . . . 470

FRONEMAN, P.W. and KAEHLER, S. . . . 121

Fumonisins. The antifungal effect of fumonisin B_1 on *Fusarium* and other fungal species . . . 455

G

Gallium arsenide substrates. Comments on the reflectivity of $Al_xGa_{1-x}As$ and $In_xGa_{1-x}As$ layers on GaAs substrates . . . 413

GALPIN, J.S. and TURNER, C.R. . . . 223, 225

Gamma-ray burst. SAAO, PLANET and gamma-ray burst GRB 990510 . . . 550

Gastric mucin. The fragmentation of MUC 5AC gastric mucin in diseased states . . . 59

GEEL, B. VAN see VAN GEEL, B.

GEERTSEMA, H. and VAN DIJK, D.E. . . . 229

Geodesy research. A review of South African research on geodesy: 1995–1999 . . . 269

Geomagnetism research. A review of geomagnetism and aeronomy research in South Africa: 1995–1998 . . . 272

Geometric designs. Computer generation of geometric designs woven into the *izimbenge* using algorithmic processes developed in the field of fractal geometry . . . 434

GETZ, C.G.L. . . . 434

GIBBONS, M.J. . . . 8

GIESEKKE, E.W. . . . 367

GLASER, H.S.R. and TOBIAS, P.V. . . . 114

Glutathione S-transferase. The expression of pi glutathione S-transferase in human chordomas . . . 311

Gondwana. *Parotosuchus* (Amphibia, Temnospondyli) in Gondwana: biostratigraphic and palaeobiogeographic implications . . . 458

GRÜNDLINGH, M.L., *et al.* . . . 281

GURNEY, L., *et al.* . . . 420

GUTZMER, J., *et al.* . . . 450

H

HANCOX, P.J., *et al.* . . . 555

HÄNEL, C. and CHOWN, S.L. . . . 87

HEARNE, G.R. . . . 373

HELAS, G., *et al.* . . . 141

HELD, G., *et al.* . . . 35, 420

HENZI, S.P., *et al.* . . . 240, 354

HERBERT, D.G. . . . 77

Herder-hunter interactions. Later Stone Age herder-hunter interactions reflected in ceramic distributions in the upper Seacow River valley . . . 171

HICKMAN, R., *et al.* . . . 59

Hill, Arthur Croft. Arthur Croft Hill — a pioneer in 1898 of laboratory biosynthesis . . . 61

HILL, P.J., *et al.* . . . 517

HILL, R.A. . . . 123

HINZEN, C. BOIX see BOIX-HINZEN, C. Hoanib River deposits. River-end deposits along the Hoanib River, northern Namib: archives of Late Holocene climatic variation on a subregional scale . . . 205

HOLMES, P.J. and BATEMAN, M.D. . . . 57

HOLMGREN, C., *et al.* . . . 46

HORNE, D.W.K., *et al.* . . . 215

HORNER, I.J., *et al.* . . . 517

Horticultural research. Horticultural research in the National Botanical Institute of South Africa: past achievments and future directions . . . 344

HOSKING, S.G. and DU PREEZ, M. . . . 442

Human chordomas. The expression of pi glutathione S-transferase in human chordomas . . . 311

Human evolution. Dating, demography, ecology and encephalization in relation to human evolution . . . 189

HUNT, B., *et al.* . . . 420

HUNT, R.H., *et al.* . . . 215

HUYSER, O., *et al.* . . . 50

Hydrological research. Hydrological science in South Africa: 1995–1998 . . . 259

Hydrometallurgical separation. Solving hydrometallurgical problems in a platinum group metal refinery with X-ray powder diffraction . . . 535

I

Insecticide resistance. DDT, dieldrin and pyrethroid insecticide resistance in African malaria vector mosquitoes: an historical review and implications for future malaria control in southern Africa . . . 215

Intrusive rock research. A review of South African research on volcanic rocks, related intrusive rocks, and mantle-derived materials: 1995–1998 . . . 247

Invader plants. Alternative uses for some invader plants: turning liabilities into assets . . . 329

Iridium systems. Aluminide compounds of selected ternary ruthenium and iridium systems . . . 517

Iron sulphide characterization. Mössbauer spectroscopy characterize iron sulphides . . . 387

Isocyanate usage. Isocyanates in South Africa: hazards, usage, and quality of health and safety information . . . 316

Isotopic record. A 3000-year isotopic record from a stalagmite in Cold Air Cave, Makapansgat Valley, Northern Province . . . 46

Izimbenge. Computer generation of geometric designs woven into the *izimbenge* using algorithmic processes developed in the field of fractal geometry . . . 434

J

Jamal Cave, Israel. A $^{230}Th/^{234}U$ date for the Acheulo-Yabrudian layer in the Jamal Cave, Mount Carmel, Israel . . . 186

JOHNSON, A., *et al.* . . . 281

JOHNSON, C.D. and TEGEN, R. . . . 13

JONES, C.A. WHITTINGTON see WHITTINGTON-JONES, C.A.

JONES, R.T. . . . 525

K

KAEHLER, S. and FRONEMAN, P.W. . . . 121

KAEHLER, S., *et al.* . . . 420

KAHN, D., *et al.* . . . 59

Kasikili Island. Science, history and the Kasikili Island dispute . . . 321

Katberg Formation fossil. A lower *Cynognathus* Assemblage Zone fossil from the Katberg Formation (Beaufort Group, South Africa) . . . 555
KELLY, P.J., *et al.* . . . 448
KENNETT, J., *et al.* . . . 201
KERLEY, G.I.H., *et al.* . . . 244
KEYSER, Z., *et al.* . . . 455
KIRKBRIDE, A.N., *et al.* . . . 335
KIVIETS, G.B., *et al.* . . . 450
KLAASEN, J.A., *et al.* . . . 455
KLEIN, R.G. and CRUZ-URIBE, K. . . . 81
KNIGHT, B.K., *et al.* . . . 311
KOCK, J.L.F., *et al.* . . . 557
KOHRS, S., *et al.* . . . 420
KORAL, H., *et al.* . . . 201
KRONFELD, J., *et al.* . . . 186, 201
KROON, R.E. and NEETHLING, J.H. . . . 349

L

LACHMANN, G., *et al.* . . . 387
Ladle desulphurization. Modelling pyrometallurgical kinetics: ladle desulphurization . . . 377
LAING, M. and SMITH, I.W.S. . . . 535
Lake Kinneret. A stable carbon isotope study of dissolved inorganic carbon in hardwater Lake Kinneret (Sea of Galilee) . . . 166
Land rehabilitation. Diagnosis of the rehabilitation of opencast coal mines on the Highveld of South Africa . . . 210
Landscape development timing. Timing of landscape development and calcrete genesis in northern Namaqualand, South Africa . . . 357
LANEY, C.D. and MENZIES, J.W. . . . 550
LANGE, J.H. DE see DE LANGE, J.H.
Langebaan Lagoon. *Siphonaria compressa*, South Africa's most endangered marine mollusc . . . 77
Language theory. Language theory and its applications in science . . . 219
Laplace-Runge-Lenz vector. Generalized Laplace-Runge-Lenz vectors and nonlocal symmetries . . . 403
Late Holocene climate. River-end deposits along the Hoanib River, northern Namib: archives of Late Holocene climatic variation on a subregional scale . . . 205
LAUGKSCH, R.C. and SPARGO, P.E. . . . 427
LAWES, M.J., *et al.* . . . 461
LAWRIE, M. . . . 155
LAWRIE, S., *et al.* . . . 420
LAWS, M.J., *et al.* . . . 499
LEACH, P.G.L. and PILLAY, T. . . . 403
Lead pollution. A note on changes in atmospheric lead content in seven cities in South Africa . . . 117
LEE-THORP, J.A., *et al.* . . . 46
LEPAGE, D., *et al.* . . . 400
Limpet grazing effects. Temporal variability in the effects of grazing by the territorial limpet *Patella longicosta* on the productivity of the crustose alga *Ralfsia verrucosa* . . . 121
Livestock–wildlife interaction. Alternatives for controlling animal diseases resulting from interaction between livestock and wildlife in southern Africa . . . 71
LLOYD, P., *et al.* . . . 50
Long-term ecological research. A South African long-term ecological research network: a first for Africa? . . . 244
LOYSON, P. . . . 470
Luminescence dating. Optical dating in southern Africa . . . 181
Luminescence dating. Orange River alluvial terraces: is luminescence dating a useful tool? . . . 57
LUTJEHARMS, J.R.E. . . . 4
LUTJEHARMS, J.R.E., *et al.* . . . 281
LYCETT, J.E., *et al.* . . . 354

M

MAAREN, H., *et al.* . . . 259
MACHU, E., *et al.* . . . 420
Macroporous bioceramics. Macroporous hydroxyapatite bioceramics by solid freeform fabrication: towards custom implants . . . 325
Macroporous bone substitute manufacture. Macroporous synthetic hydroxyapatite bioceramics for bone substitute applications . . . 359
MAGWA, M.L., *et al.* . . . 329
MAGWA, M.L., *et al.* . . . 351
Malaria control. DDT, dieldrin and pyrethroid insecticide resistance in African malaria vector mosquitoes: an historical review and implications for future malaria control in southern Africa . . . 215
MALL, A.S., *et al.* . . . 59
MANCHESTER, K.L. . . . 5, 61, 332
MARASAS, W.F.O., *et al.* . . . 455
Marine fauna diversity. The taxonomic richness of South Africa's marine fauna: a crisis at hand . . . 8
Marine research. Physical oceanographic activities in South Africa: 1995–1998 . . . 281
Marion Island Survey. The fourth cruise of the Marion Island Oceanographic Survey (MIOS-IV), April to May 1999 . . . 420
Marion Island. Fifty years at Marion and Prince Edward Islands: a bibliography of scientific and popular literature . . . 87
MARKUS, M.B., *et al.* . . . 133
MASON, P.R., *et al.* . . . 448
Matriculant scientific literacy. Scientific literacy of selected South African matriculants entering tertiary education: a baseline survey . . . 427
McGEOCH, M.A. . . . 432
McKENZIE, R.S., *et al.* . . . 259
McLEOD, H., *et al.* . . . 59
McQUAID, C.D., *et al.* . . . 420
Mediterranean Black Sea interchange. Stable isotopic evidence from Holoçene Sea of Marmara sediments for two-way watermass interchange between the Black Sea and the Mediterranean Sea . . . 201
MEIJER, R.J. DE see DE MEIJER, R.J.
Melkbosstrand crania. Violent human death in the past: a case from the Western Cape . . . 137
MENTIS, M.T. . . . 210
MENZIES, J.W. and LANEY, C.D. . . . 550
MERWE, N.J. VAN DER see VAN DER MERWE, N.J.
MESCHT, A. VAN DER see VAN DER MESCHT, A.
Meteorology research. A review of research in South African meteorology and atmospheric sciences: 1995–1998 . . . 288
Microanalytical techniques. Future microanalytical needs in minerals research . . . 397
Microbiology. South African Society for Microbiology: abstracts of papers and posters presented at the 10th Biennial Congress, Durban, 5–8 July 1998 . . . No. 5: i
Microwave heating. Applications of microwave heating in mineral processing . . . 394
Millennium bug. Beyond Y2000 . . . 155
MILLER, R. and BRADBURY, J. . . . 30
MILTON, S.J., *et al.* . . . 50
Mineral high P-T treatment. Novel materials derived from minerals at high P-T . . . 373
Mineral processing. Applications of microwave heating in mineral processing . . . 394
Mineral research priorities. Seeking solutions from the science of minerals for some high-priority problems . . . 364
Mineral-based waste treatment. Mineral-based treatment strategies for wastes and effluents . . . 367
Minerals characterization. Future microanalytical needs in minerals research . . . 397
Mining and mineral processing. Seeking solutions from the science of minerals for some high-priority problems . . . 364
MITCHELL, P.J. . . . 432
MODESTO, S., *et al.* . . . 553
MOOK, W.G. and VAN DER PLICHT, J. . . . 164
MORAKILE, G.I., *et al.* . . . 557

Mosquitoe insecticide resistance. DDT, dieldrin and pyrethroid insecticide resistance in African malaria vector mosquitoes: an historical review and implications for future malaria control in southern Africa . . . 215

Mössbauer spectroscopy. Mössbauer spectroscopy characterize iron sulphides . . . 387

Mount Carmel caves. A $^{230}Th/^{234}U$ date for the Acheulo-Yabrudian layer in the Jamal Cave, Mount Carmel, Israel . . . 186

Mountain gorillas. Memories of Walter Baumgartel (1902–1997): pioneering promoter of the mountain gorillas of Uganda . . . 114

Mucin degradation. The fragmentation of MUC 5AC gastric mucin in diseased states . . . 59

MUNUERA, M., *et al.* . . . 44

N

Namaqualand calcretes. Timing of landscape development and calcrete genesis in northern Namaqualand, South Africa . . . 357

National Botanical Institute. Horticultural research in the National Botanical Institute of South Africa: past achievements and future directions . . . 344

NAVARRO, C., *et al.* . . . 44

NEETHLING, J.H. and KROON, R.E. . . . 349

NELSON, G., *et al.* . . . 281

Neuropsychological correlates. Neuropsychological correlates of alcholic hangover . . . 145

NEUSE, E.W. . . . 509

Neutrino overview. The 'Little Neutral One'; an overview of the neutrino . . . 13

NEVELING, J., *et al.* . . . 555

NIEKERK, H.S. VAN see VAN NIEKERK, H.S.

NIEROP, W.H. VAN see VAN NIEROP, W.H.

NISSENBAUM, A. and STILLER, M. . . . 166

Normal absorption coefficient. A lower limit for normal absorption in the calculation of transmission electron microscope images . . 349

Novel mineral materials. Novel materials derived from minerals at high *P-T* . . . 373

O

Oceanographic research. Physical oceanographic activities in South Africa: 1995–1998 . . . 281

Oceanographic Survey. The fourth cruise of the Marion Island Oceanographic Survey (MIOS-IV), April to May 1999 . . . 420

OKAFOR, V.I. and COVILLE, N.J. . . . 503

OLIVIER, J. . . . 288

Opencast mine rehabilitation. Diagnosis of the rehabilitation of opencast coal mines on the Highveld of South Africa . . . 210

Optical dating. Optical dating in southern Africa . . . 181

Ornithological research. Flying high: current directions in avian research . . . 50

ORPEN, W.R.G., *et al.* . . . 259

Osteoinductivity. Sintered porous hydroxyapatites with intrinsic osteoinductive activity: geometric induction of bone formation . . 335

Oxyhydroxides dating. An $^{40}Ar/^{39}Ar$ age of supergene K-Mn oxyhydroxides in a post-Gondwana soil profile on the Highveld of South Africa . . . 450

Ozone measurements. Surface UV-B irradiance and total column ozone above SANAE, Antarctica . . . 26

P

PADAYACHEE, J., *et al.* . . . 397

PAKHOMOV, E.A., *et al.* . . . 420

Palaeoclimates. Atmospheric circulation changes and palaeoclimates of southern Africa . . . 194

Palaeozoic ensiferan insect. The earliest known Palaeozoic ensiferan insect from Africa, *Afroedischia oosthuizeni* gen. *et* sp. nov. (Orthoptera: Oedischiidae) . . . 229

Palladium resources. The platinum and palladium resources of the Bushveld Complex . . . 481

PARKINGTON, J.E., *et al.* . . . 137

Parotosuchus (Amphibia, Temnospondyli) in Gondwana: biostratigraphic and palaeobiogeographic implications . . . 458

PARTRIDGE, T.C. and WOODBORNE, S. . . . 163

Pauling, Linus. Linus Pauling and biochemistry. How things were shaping up 50 years ago . . . 5

PERMAUL, K., *et al.* . . . 307

PFEIFFER, S., *et al.* . . . 137

PHILANDER, C., *et al.* . . . 381

PHILLIPS, D., *et al.* . . . 450

PICKFORD, M., *et al.* . . . 357

PIKETH, S.J., *et al.* . . . 35

PILLAY, B., *et al.* . . . 307

PILLAY, D., *et al.* . . . 307

PILLAY, T. and LEACH, P.G.L. . . . 403

PISTORIUS, P.C. and VERMAAK, M.K.G. . . . 377

PITMAN, W., *et al.* . . . 259

Plant diversity. Documenting plant diversity on a global scale: recent progress with the Species Plantarum: Flora of the World project . . . 55

Plant pathology. Southern African Society for Plant Pathology — abstracts from the 37th Annual congress, Pietermaritzburg, 17–20 January 1999 . . . No. 3, i

Plantation management. Developing environmental criteria and indicators for sustainable plantation management: the South African perspective . . . 461

Plasmid characterization. Characterization of an indigenous plasmid in *Xanthomonas albilineans* . . . 307

Plasmodium falciparum drug resistance. Comparison of *in vitro* chloroquine sensitivity testing with detection of pfmdr1 point mutations in *Plasmodium falciparum* . . . 133

Platinum catalysed reactions. Platinum in catalysis . . . 503

Platinum drugs. Platinum coordination compounds in cancer research and chemotherapy . . . 509

Platinum group metal mineralization. Geological models for platinum-group metal mineralization in the Bushveld Complex . . . 490

Platinum group metals analysis. The platinum-group metals — an analytical challenge . . . 499

Platinum jewellery. Innovations in platinum jewellery materials . . . 543

Platinum resources. The platinum and palladium resources of the Bushveld Complex . . . 481

Platinum review. Platinum in South Africa . . . 476

Platinum smelting. Platinum smelting in South Africa . . . 525

PLESSIS, M. DU see DU PLESSIS, M.

PLESSIS, M.A. DU see DU PLESSIS, M.A.

PLICHT, J. VAN DER see VAN DER PLICHT, J.

Pliocene fossil woods from an early hominid cave deposit, Sterkfontein, South Africa . . . 231

PLUG, C. . . . 2

POHL, C.H., *et al.* . . . 557

POLLAK, H., *et al.* . . . 387

Pollen sequence. Palaeoecological evidence of pollen sequence in eastern Spain challenges existing concepts of vegetation change . . . 44

PORAT, N., *et al.* . . . 186

Post-Gondwana soil profile. An $^{40}Ar/^{39}Ar$ age of supergene K-Mn oxyhydroxides in a post-Gondwana soil profile on the Highveld of South Africa . . . 450

Potato drought tolerance. Chlorophyll fluorescence and chlorophyll content as a measure of drought tolerance in potato . . . 407

PRAUSE, A.R., *et al.* . . . 26

PREEZ, M. DU see DU PREEZ, M.

PREEZ, W.B. DU see DU PREEZ, W.B.

Pressure-induced amorphization. Novel materials derived from minerals at high *P-T* . . . 373

PRETORIUS, E.E., *et al.* . . . 557

Prince Edward Island Survey. The fourth cruise of the Marion Island Oceanographic Survey (MIOS-IV), April to May 1999 . . . 420

Prince Edward Islands. Fifty years at Marion and Prince Edward Islands: a bibliography of scientific and popular literature . . . 87

PROZESKY, V.M., *et al.* . . . 397

PRZYBYLOWICZ, W.J., *et al.* . . . 397

Pyrite characterization. Mössbauer spectroscopy characterize iron sulphides . . . 387

Pyrometallurgical kinetics. Modelling pyrometallurgical kinetics: ladle desulphurization 377

Q

Quagga taxonomy. Craniometry of the genus *Equus* and the taxonomic affinities of the extinct South African quagga 81
Quaternary Dating Research. Lessons for South African science: perspectives on QUADRU 154
Quelea control. Testing chemical markers on granivorous birds. 79

R

Radiocarbon dating. Radiocarbon during a lifetime 164
Rain quality. Trends in rain quality data from the South African interior 223
Rainfall acidity. Trends in composition of rain quality data from the South African interior 225
RAOULT, D., *et al.* 448
Rapid prototyping. Novel combination of reverse engineering and rapid prototyping in medicine 327
Reflectivity. Comments on the reflectivity of $Al_xGa_{1-x}As$ and $In_xGa_{1-x}As$ layers on GaAs substrates. 413
Rehabilitation of opencast mines. Diagnosis of the rehabilitation of opencast coal mines on the Highveld of South Africa 210
Research Centre. A proposed South African think-tank for our continent and the world 159
Research cooperation. Launch of the European Union's 5th Framework Programme for research 54
Research funding. Launch of the European Union's 5th Framework Programme for research. 54
Reverse engineering. Novel combination of reverse engineering and rapid prototyping in medicine 327
RICHTER, P.W., *et al.* 325, 327, 359
Rickettsiae. Experimental infections of vervet monkeys (*Cercopithecus pygerythrus*) with three spotted fever group rickettsiae 448
RIPAMONTI, U., *et al.* 335, 359
River-end deposits along the Hoanib River, northern Namib: archives of Late Holocene climatic variation on a subregional scale 205
Roberts, Austin : The man behind the books: book review 112
ROBERTS, M., *et al.* 281
ROBINSON, R.E. 364
RONDE, J.A. DE see DE RONDE, J.A.
ROOSEBOOM, A., *et al.* 259
ROOYEN, P.G. VAN see VAN ROOYEN, P.G.
ROSSOUW, F.T., *et al.* 407
ROZENDAAL, A., *et al.* 381
RUBIDGE, B.S., *et al.* 553, 555
RUST, U. 205
Ruthenium applications. New applications for ruthenium. 539
Ruthenium systems. Aluminide compounds of selected ternary ruthenium and iridium systems 517
RUTHERFORD, M.C., *et al.* 344

S

SAMPSON, C.G. and BOLLONG, C.A. 171
SCHENKER, R., *et al.* 327
SCHULZE, R.E., *et al.* 259
SCHUMANN, E.H., *et al.* 281
Science history. South African science in the years 1899–100*n* . . . 2
Scientific literacy. Scientific literacy of selected South African matriculants entering tertiary education: a baseline survey 427
SCOURFIELD, M.W.J., *et al.* 26
Sea of Marmara sediments. Stable isotopic evidence from Holocene Sea of Marmara sediments for two-way watermass interchange between the Black Sea and the Mediterranean Sea 201
Seacow River valley ceramics. Later Stone Age herder-hunter interactions reflected in ceramic distributions in the upper Seacow River valley 171
Sedudu Island. Science, history and the Kasikili Island dispute 321
Selenization. The influence of H_2Se annealing procedure on the material quality of $CuInSe_2$ films 415
Sellschop, J.P.F. Interview with South African neutrino pioneer 20
SENUT, B., *et al.* 357
SHANNON, L., *et al.* 281
SIDOR, C., *et al.* 553
SIE, S.H., *et al.* 397
Sintered hydroxyapatites. Sintered porous hydroxyapatites with intrinsic osteoinductive activity: geometric induction of bone formation 335
SITHOLE, J.S., *et al.* 141
SMITH, G.F. 55
SMITH, G.F. and WILLIS, C.K. 156
SMITH, G.F., *et al.* 344
SMITH, I.W.S. and LAING, M. 535
SNIJMAN, P.W., *et al.* 455
Social upliftment. African Renaissance or descent into anarchy? . . 423
Solid freeform fabrication. Macroporous hydroxyapatite bioceramics by solid freeform fabrication: towards custom implants 325
South-African weather. Vooruitgang in Suid-Afrikaanse weerkunde 4
Soweto atmosphere. Giant dendritic carbonaceous particles in Soweto aerosols 141
SPARGO, P.E. and LAUGKSCH, R.C. 427
Species Plantarum Project. Documenting plant diversity on a global scale: recent progress with the Species Plantarum: Flora of the World project 55
STADEN, J. VAN see VAN STADEN, J.
STEELE, G.R., *et al.* 79
STEPHENS, D.J. and DUNLEVEY, J.N. 390
Sterkfontein *Australopithecus* discovery. Discovery of complete arm and hand of the 3.3-million-year-old *Australopithecus* skeleton from Sterkfontein 477
Sterkfontein deposits. Pliocene fossil woods from an early hominid cave deposit, Sterkfontein, South Africa 231
STEVENSON, C., *et al.* 46
STILLER, M. and NISSENBAUM, A. 166
Student selection criteria. Academic performance of English first and second language students: selection criteria 30
SUTCLIFFE, P.R. 272
SUTTON, W.S., *et al.* 311
SWAP, R.J. and TYSON, P.D. 63
SWAP, R.J., *et al.* 35
SWART, B. 219
SWEENEY, R., *et al.* 397
Symmetries. Generalized Laplace-Runge-Lenz vectors and nonlocal symmetries 403
Systematic biology. Systematic biologists in South Africa join forces 156
Szent-Györgyi, Albert. Albert Szent-Györgyi and the role of free radicals in the electronic theory of cancer 332

T

TAYLOR, S.S. and BIGGS, T. 543
TEGEN, R. and JOHNSON, C.D. 13
THOMAS, M.E., *et al.* 325, 327, 359
THOMSON, G.R. 71
THORP, J.A. LEE see LEE-THORP, J.A.
TOBIAS, P.V. 189
TOBIAS, P.V. and GLASER, H.S.R. 114
Tortoise predation. Size-dependent tortoise predation by baboons at De Hoop Nature Reserve, South Africa 123
Trace gas vertical distribution. Stable discontinuities as determinants of the vertical distribution of aerosols and trace gases in the atmosphere 63
TSATSKIN, A., *et al.* 186
TSHIGUVHO, T., *et al.* 244
Tsitsikamma mountain catchment. A cost-benefit analysis of removing alien trees in the Tsitskamma mountain catchment . . . 442
TURNER, C.R. and GALPIN, J.S. 223, 225
TYSON, P.D. 194

TYSON, P.D. and SWAP, R.J. 63

U

Upper Beaufort biozones. A lower *Cynognathus* Assemblage Zone fossil from the Katberg Formation (Beaufort Group, South Africa) 555
URIBE, K. CRUZ see CRUZ-URIBE, K.
UV-B irradiance measurements. Surface UV-B irradiance and total column ozone above SANAE, Antarctica 26

V

Valleriite characterization. Mössbauer spectroscopy characterize iron sulphides 387
VAN DER MERWE, N.J., *et al.* 137
VAN DER MESCHT, A., *et al.* 407
VAN DER PLICHT, J. and MOOK, W.G. 164
VAN DER WALT, J.P. 440
VAN DEVENTER, T., *et al.* 325, 359
VAN DIJK, D.E. and GEERTSEMA, H. 229
VAN GEEL, B., *et al.* 44
VAN NIEKERK, H.S., *et al.* 450
VAN NIEROP, W.H., *et al.* 133
VAN ROOYEN, P.G., *et al.* 259
VAN STADEN, J., *et al.* 329, 351
VAN VUUREN, S.J., *et al.* 259
Vegetation of Spain. Palaeoecological evidence of pollen sequence in eastern Spain challenges existing concepts of vegetation change 44
VERMAAK, M.K.G. and PISTORIUS, P.C. 377
Vervet monkeys. Experimental infections of vervet monkeys (*Cercopithecus pygerythrus*) with three spotted fever group rickettsiae 448
Violent human death. Violent human death in the past: a case from the Western Cape 137
VISMER, H.F., *et al.* 455
Vitamin B_{12}. Vitamin B_{12} joins the club: a review of structural studies and implications for mechanisms of enzymatic reactions 125
Vogel, John. John Vogel: an appreciation 163
Volcanic rock research. A review of South African research on volcanic rocks, related intrusive rocks, and mantle-derived materials: 1995–1998 247
VUUREN, S.J. VAN see VAN VUUREN, S.J.

W

WAANDERS, F.B., *et al.* 387
WALDRON, H., *et al.* 420
WALT, J.P. VAN DER see VAN DER WALT, J.P.
WANLESS, R., *et al.* 50
Waste treatment. Mineral-based treatment strategies for wastes and effluents 367
Waste-water effluents. Quality assessments for chlorides, nitrates and phosphates in drinking water and waste-water effluents of major cities in the Eastern Cape, South Africa 237
Water conservation. A cost-benefit analysis of removing alien trees in the Tsitskamma mountain catchment 442
Water resource management. Hydrological science in South Africa: 1995–1998 259
WEBBER, L.N., *et al.* 329, 351
WEINBRUCH, S., *et al.* 141
WEINGRILL, T., *et al.* 240, 354
WEINSTEIN-EVRON, M., *et al.* 186
WELMAN, J., *et al.* 553
WENTZEL, M., *et al.* 141
West coast zircons. Characteristics of zircon in placer deposits along the west coast of South Africa 381
WHITTINGTON-JONES, C.A., *et al.* 79
Wildlife–livestock interaction. Alternatives for controlling animal diseases resulting from interaction between livestock and wildlife in southern Africa 71
WILLIS, C.K. and SMITH, G.F. 156
WINTLE, A.G. 181
WIT, M.J. DE see DE WIT, M.J.
WITCOMB, M.J., *et al.* 415, 517
WITCOMB, M.J., *et al.* 517
WOLFF, I.M. 539
WONNACOTT, R.T. 269
WOODBORNE, S. 154
WOODBORNE, S. and PARTRIDGE, T.C. 163

X

X-ray diffraction mineral analysis. Recovery of dispersed clay-sized suspensions for X-ray diffraction mineral analysis 390
X-ray powder diffraction. Solving hydrometallurgical problems in a platinum group metal refinery with X-ray powder diffraction 535

Y

Y2000. Beyond Y2000 155
YANKO, V., *et al.* 201
YATES, R., *et al.* 137

Z

Zircon characteristics. Characteristics of zircon in placer deposits along the west coast of South Africa 381
ZUNCKEL, M., *et al.* 35